

# Introduction

---

The Project Area and the southern portion of the Tomales Bay watershed currently support many important biological, physical, and social resources that may be impacted either positively or negatively by alternatives proposed under the Giacomini Wetland Restoration Project. This chapter provides an understanding of both the general environmental setting of the Project Area and a more focused description of those specific resources that could be affected by implementation of the proposed project.

The Affected Environment description is required by NEPA (Section 1502.15) and CEQA regulations (Section 15125) to “succinctly describe” resources or impact areas that could be affected directly or indirectly by project implementation. According to CEQA regulations, this chapter must include a description of the physical environmental conditions in the vicinity of the proposed project, as they exist at the time that the Notice of Intent (NOI) and Notice of Preparation (NOP) are published or at the time environmental analysis is commenced (Section 15125). This environmental setting normally constitutes the baseline physical conditions by which the lead agencies, in this case the Park Service and SLC, determine whether an impact is significant (CEQA, Section 15125).

Knowledge of the regional setting is critical to the assessment of environmental impacts (CEQA, Section 15125). As described in Chapter 1, most of the impact areas or topics were selected through scoping based on the potential for negligible to significant or major impacts either on a temporary, short-term, or long-term basis. While NEPA is only triggered when there is a physical impact on the environment, the Council of Environmental Quality (CEQ) regulations require analysis of social and economic effects in NEPA documents where they might be affected (NPS, Director’s Order 12). CEQA does not require analysis of economic or social effects, with the emphasis primarily on physical changes, however, economic or social effects of a project may be used to determine the significance of physical changes caused by the project (CEQA, Section 15131).

Scoping determined that the areas of the environment that could be affected by the proposed project are:

- Land Use,
- Geologic Resources,
- Soil Resources,
- Air Resources,
- Water Resources,
- Vegetation Resources,
- Fish and Wildlife Resources,
- Cultural Resources,
- Public Health and Safety,
- Public Services,
- Visitor and Resident Experience,
- Socioeconomic Resources, and
- Park Management and Operations.

Those impact areas or topics on which the proposed project would have no or only a very negligible effect are described in Chapter 1, but are dismissed from further analysis in this chapter and Chapter 4.

The Affected Environment chapter contains a detailed description or background information on the resource or impact topics. This information provided was gathered from numerous sources, including literature reviews, existing data, and baseline studies conducted as part of the project planning effort within the Project Area. Where applicable, resource or impact topics include a brief discussion of pertinent regulations, laws, ordinances, and policies to create a framework or context in which existing conditions and impacts can be objectively evaluated. Additional information on regulations pertaining to this project appears in Chapters 1 and 6.



## Project Setting

### Regional and Park Context

The Project Area is located in central California, in western Marin County, approximately 40 miles northwest of the city of San Francisco (Figure 1). It is comprised of federal lands managed by the Seashore, a unit of the national park system, and is within 50 miles of the nine-county San Francisco Bay Area, the fifth largest metropolitan area in the United States. Generally, the more developed regions of the bay area surround the bay itself, with smaller cities, towns, open space and agricultural areas in an outer ring around the urban core. Thirty-three percent (110,822 acres) of the 332,800 acres in Marin County is held as parks, open space and watershed (Marin County Community Development Agency 2004). Fifty-one percent (169,000 acres) is zoned for agricultural use. Developed lands constitute only 11 percent of the county, while 5 percent of the county currently has future development potential (Marin County Community Development Agency 2005).

---

*Roughly 90 percent of  
the 250,000 residents of  
Marin County live in the  
eastern half of the county  
along State Highway 101.*

---

While eastern Marin is heavily developed along the Highway 101 corridor, western Marin is primarily rural with scattered, small unincorporated towns that serve ranchers and farmers, local residents, and tourists. Roughly 90 percent of the 250,000 residents of Marin County live in the eastern half of the County along the major transportation corridor -- State Highway 101. The Seashore lies on the western perimeter of Marin County, encompassing 71,046 acres beaches, coastal cliffs and headlands, marine terraces, coastal uplands, woodlands, and forests on the Point Reyes Peninsula. The north district of GGNRA adds another approximately 20,000 acres of federally protected lands. Together, these lands account 86 miles of shoreline on both the Pacific Ocean and Tomales Bay.

---

The Seashore is bounded to the north, west and southwest by the Pacific Ocean and to the east by the residential communities of Inverness, Inverness Park, Point Reyes Station, Olema, and Dogtown. The town of Bolinas is south of the Seashore at the southern tip of the Peninsula. To the east, the Seashore is bounded by Tomales Bay, most of which falls under Park Service ownership and/or oversight. An estimated 11,000 people live in 11 towns and villages in the Tomales Bay watershed (TBWC 2003). The census population figure does not count the many part-time residents who maintain second homes in west Marin.

East of the Seashore and GGNRA, land use is a mix of private residential and agricultural lands, publicly held watershed, and parks and open space. Adjacent to the park are areas managed by Audubon Canyon Ranch, Marin Municipal Water District, Tomales Bay and Samuel P. Taylor State Parks, and Marin County Open Space District lands. Marine boundaries are shared with the Gulf of the Farallones and the Cordell Banks National Marine Sanctuaries and Tomales Bay State Park. Some agricultural parcels have conservation easements deeded to the Marin Agricultural Land Trust, in which the owners have released development rights to protect rural agriculture from development pressures.

### Park and Project Area History

The original inhabitants of the Point Reyes area were the Coast Miwok Indians. The Coast Miwok subsisted as hunters and gatherers, relying on the area's plentiful natural resources such as game, birds, fish, shellfish, nuts, fruits, and vegetables for subsistence ((Livingston 1999; Marin County Community Development Agency 2001). Most experts believe that Point Reyes is the site of the first recorded English-Native American contact in North America. Sir Francis Drake may have landed here in 1579 to careen his ship before sailing across the Pacific on a circumnavigation of the globe. He and his crew are believed to have spent five weeks on the coast, repairing his damaged ship and making contact with the Coast Miwok (Kroeber 1953). Sixteen years later in 1595, the first recorded shipwreck on the West Coast occurred when the Spanish galleon San Augustin was wrecked in what is now Drakes Bay. Since then, Point Reyes became a draw from many other sailors/explorers, some of whom lost their ships off the coast. It was Spanish sailor/explorer Sebastian Vizcaino who named this area Point Reyes (Punta de los Reyes) in 1602. In 1793, a Spanish lieutenant traveled through the Olema Valley and, after noting "a wonderment of various settlements along the [Tomales] Bay shore," recommended the Olema-Point Reyes Station area as a fine location for a mission or



establishment (Livingston 1999 *in* Marin County Community Development Agency 2001). While a mission was never established at Point Reyes Station, land grants in the Point Reyes Peninsula and surrounding lands were established during the Mexican period. Point Reyes Station was located within the southwestern corner of the vast Rancho Nicasio land grant, which was granted by the Mexican governor in 1845 to Pablo de la Guerra and Juan Cooper (Livingston 1999 *in* Marin County Community Development Agency 2001). Settlement by Mexicans and, later, Americans displaced the Coast Miwok from their homes and led to drastic reductions in the number of these people through violence and disease (Cook 1976).

Most of the Mexican land grants followed a tumultuous series of ownership changes following the Mexican-American war. The Point Reyes Station portion of the Rancho Nicasio land grant eventually passed to James Black in 1851, who owned these lands for more than a century (Livingston 1999 *in* Marin County Community Development Agency 2001). In 1873, Marin County sheriff James Stocker rented the “rolling hills and level mesa of land” at Point Reyes Station from the Black-Burdell family for establishment of a dairy ranch (Livingston 1999 *in* Marin County Community Development Agency 2001). Vedanta near Bear Valley became the center of various dairies during the late 1800s, with Bear Valley Creek running through the dairy yard. Bear Valley Creek and Olema Marsh areas were a part of historic W Ranch. Fields around Bear Valley and Olema were cleared of brush in the 1860’s and heavily grazed. Some fields in Olema and Bear Valleys were used for silage.

In the late 1800s, the Point Reyes region became known throughout California as a premiere dairy and beef cattle ranching region, with its cream and butter products commanding top dollar in San Francisco. As one writer noted, “the product of Point Reyes can be summed up in one word – butter” (Munro-Fraser 1880; Garcia and Associates 2004). Most of the ranches in the Point Reyes area specialized in dairying, cheese and butter production, although some moved into beef cattle ranching and artichoke farming. While people from many countries immigrated to California, the Italian-Swiss and Portuguese immigrants were particular numerous and eventually moved into dairying on the California coastline (Raup 1951). Roads were needed to connect the ranches with outside markets. The original road from Olema, which was the main town at that time, to the Point Reyes Peninsula was later replaced in 1875 with a road that follows the current Bear Valley Road - Sir Francis Drake Boulevard path (Livingston 1994). During the late 1800s-early 1900s, the lower portion of the Bear Valley Creek watershed was leveed by construction of a road berm across the mouth of Bear Valley Creek for Levee Road near its confluence with Lagunitas Creek.

The other industry that boomed in the area during the late 1800s was logging of the Inverness and Bolinas Ridges adjoining Tomales Bay. Until the 1880s, 100-ton steamships navigated Lagunitas Creek -- formerly known as Papermill Creek -- on high tides to the old paper mill located near the existing Green Bridge (PWA et al. 1993). In 1874, the North Pacific Coast Railroad constructed tracks through Point Reyes Station, connecting Sausalito to the Russian River area north of Marin County, where timber and butter could be transported to market (Livingston 1999 *in* Marin County Community Development Agency 2001). While logging activities in the Point Reyes area increased exponentially during the late 1800s, removal of trees for lumber was limited in the Bear Valley Creek watershed and restricted largely to that needed by the ranch itself.

Construction of the railroad and growth of the local dairy industry proved the impetus for the birth of the town of Point Reyes Station around 1875 (Livingston 1999 *in* Marin County Community Development Agency 2001). Hotels, saloons, schools, churches, and stores were quickly built to accommodate train passengers and visitors to the town. Even the devastating 1906 San Francisco Earthquake -- the epicenter of which was once believed to be Olema, but is now thought by the USGS to be offshore of the Golden Gate Bridge -- did not derail this period of prosperity, with merchants rebuilding stores destroyed in the earthquake with even more grandiose structures (Livingston 1999 *in* Marin County Community Development Agency 2001). The existing Giacomini Dairy Facility property on the Point Reyes Mesa underwent several ownership changes during the late 1800s and early 1900s, including ownership stints by the Burdell and Wilson families (Garcia and Associates 2004). In 1917, the Filippini family established a small 50-cow dairy at the location of the existing Giacomini Ranch Dairy Facility (Livingston 1999 *in* Marin County Community Development Agency 2001).

However, as quickly as the town’s fortunes waxed following construction of the railroad and growth of the dairy industry, its fortunes waned following closure of the railroad in 1933 and the onset of the Great Depression (Livingston 1999 *in* Marin County Community Development Agency 2001). At the end of World War II, the Giacomini family assumed ownership of the Filippini Dairy and leveed approximately 550 acres of marshland for use as pastures (Livingston 1999 *in* Marin County Community Development Agency 2001).



Many of the community's original businesses folded in the 1950s, only to be replaced with a slightly different type of commercial enterprise when the Seashore was established in 1962 (Livingston 1999 *in* Marin County Community Development Agency 2001). These new businesses catered to more of a tourist economy and included small shops such as a book store, natural foods store, restaurants, and bakeries.

---

*The Seashore's enabling*

*legislation not only*

*protects coastal and*

*natural resources, but*

*allows for preservation of*

*the pastoral landscape*

*created by more than*

*100 years of dairying and*

*beef cattle ranching.*

---

Point Reyes had been the object of land protection efforts since the first park feasibility study was authorized in the 1930s. As pressure to develop lands along the Marin coast increased, so did the momentum to protect it. Within the Drakes Estero watershed, large tracts of agricultural lands had been sold to developers and were already being subdivided and developed with approximately 12 houses constructed at Limantour Beach. It was this development pressure that encouraged Congress to push forward with legislation in the early 1960s to protect the coastal resources unique to the Point Reyes peninsula. Although ownership of ranches on the Point Reyes Peninsula transferred to the Park Service, many of the ranch families remained on the land through long-term leases. The Seashore's enabling legislation not only protects coastal and natural resources, but allows for preservation of the pastoral landscape created by more than 100 years of dairying and beef cattle ranching. Almost 10 years later, the GGNRA was established directly adjacent to the Seashore. The eastern portion of the Tomales Bay shoreline and portions of the Olema Valley, including many agricultural operations such as the Giacomini Ranch, were eventually incorporated into the GGNRA when its

boundaries were expanded in the 1980s. Since then, a few of these ranchers, including the Martinelli and Giacomini families, have sold their ranches to the Park Service for inclusion in the GGNRA.

## Regional and Project Area Climate

The central and southern regions of California are classified as having a Mediterranean climate, generally characterized by wet winters and dry summers. Within these regions of California, however, there is considerable variation in temperature and precipitation, from the extremely hot, dry summers in Death Valley (lowest point in the continental United States) to the foggy, cool summers on California's central coast. The climate along California's central coast is strongly influenced by its marine environment, which tends to moderate temperature extremes through a semi-permanent high-pressure system that is centered over the northeastern Pacific Ocean. Temperatures do not vary much over the year in this region, ranging from the high 50s in the winter to the low 60s in the summer (BAAQMD 2003).

During the winter and spring, the Pacific high-pressure system weakens and moves south, allowing storm systems to move through the region, usually providing copious amounts of precipitation in series of discrete storms. The west Marin coastline receives an average of 38.2 inches of rain annually. This amount is higher than much of the San Francisco Bay area due to the somewhat more elevated terrain along the coast. Most annual rainfall in Marin County occurs from November through March. In the winter, proximity to the ocean keeps the coastal regions relatively warm (BAAQMD 2003). In the summer, the relatively northern location of the strong high-pressure system results in clear skies and hot temperatures further inland and fog and cooler temperatures along the coast. Very little precipitation occurs during the summer months, because storm systems are blocked by the high-pressure system. In the summer months, the marine air is cooled as it passes over the offshore upwelling region and forms a fog layer along the coast (BAAQMD 2003). Beginning in the fall, high pressure forming over the warmer inland areas breaks the summer pattern, introducing warm, dry winds from the northeast and east. The warmest months are September and October, with daily high temperatures averaging approximately 65 to 69 degrees Fahrenheit (BAAQMD 2003).

In the vicinity of the Project Area, average temperatures (°F) during the summer vary from the high 40s to the low-to-middle 70s. During the winter, average temperatures (°F) vary from the mid-to-upper 30s to the upper 50s-low 60s. Approximately 84 percent of the precipitation occurs during November through March, generally in association with storm systems that move through the region. Winter precipitation averages 39.57 inches, slightly higher than the 38.2 inches recorded for west Marin County region. Within the Tomales Bay watershed, approximately 60 percent of the rainfall is lost to evapotranspiration; 6 percent is removed for



use outside the watershed, and the remainder flows into Tomales Bay (Smith and Hollibaugh 1998). Summer precipitation is low, averaging less than 0.2 inches per month because of the Pacific high-pressure system.

In addition to intrannual variability in precipitation, coastal California is subject to extremely wet or extremely dry periods of one or more years driven by long-term climatic trends that affect annual precipitation. El Nino climatic cycles usually produce extremely wet winters, while La Nina ones produce extremely dry winters and can result in drought conditions.

## Land Use and Planning

### General Land Use and Planning

While conservationists halted large-scale development plans in West Marin in the 1960s, helping to create the National Seashore in the process, the region continues to struggle with land use issues into the new century. Since the 1800s, west Marin has supported dairy and beef cattle ranches and was once identified as one of the leading dairy regions in California. Changing market dynamics have threatened the ranching way of life in this rural enclave of the San Francisco Bay region. A number of family farms have closed in recent decades to the economic pressures of competing with the large-scale agricultural operations in California's Central Valley. In addition, the strong housing market in Marin and elsewhere in the San Francisco Bay area continues to place pressure on undeveloped areas within the county. As with many other rural areas in California, local communities continue to grapple with the issue of improving local economic viability with maintaining rural character and small town environments.

Tomales Bay and the Point Reyes region falls within a complex, multi-jurisdictional region, with lands held by a variety of private and public entities, including County, local water districts, state agencies (State Land Commission, state parks, Wildlife Conservation Board, CalTrans), and federal agencies such as the Park Service and the U.S. Coast Guard. Thirty-three percent (110,822 acres) of the 332,800 acres in Marin County is held as parks, open space, and watershed (Marin County Community Development Agency 2005). Fifty-one percent (169,000 acres) is zoned for agricultural use (Marin County Community Development Agency 2005). Developed lands constitute only 11 percent of the county, while 5 percent of the county has future development potential (Marin County Community Development Agency 2005). The complexity is increased by the existence of land use plans and objectives established by non-landowners such as local towns or communities and regulatory agencies such as the California Coastal Commission that oversees implementation of the California Coastal Act through the Local Coastal Program or LCPs.

---

*While conservationists  
halted large-scale  
development plans in  
West Marin in the 1960s,  
helping to create the  
National Seashore in the  
process, the region  
continues to struggle  
with land use issues into  
the new century.*

---

Several agencies and organizations have established land use plans or guidance for development within the unincorporated portion of Marin County. These land use plans or guidance documents include the Point Reyes Station Community Plan, the Marin County Local Coastal Program Unit II, the Marin Countywide Plan, and the Marin County Zoning Ordinance. On federal park lands, actions are guided by the park's General Management Plan (GMP). The Seashore is currently in the process of revising the GMP for the Seashore and the north district of the GGNRA, which it manages. There are no tribal land use plans within the Project Area or immediate vicinity.

The California Government Code requires each local planning agency, such as the County of Marin, to adopt a comprehensive, long-term general plan for the physical development of the area over which it has jurisdiction. Local planning agencies may elect to prepare community plans, based on public participation and specific local conditions and goals, for individual communities within the general plan boundaries. Future planning decisions can then be based both on the general and the community-specific plan. In the Coastal Zone of California, LCPs supersede all local land use planning and take precedence over all other local policies and zoning. The Project Area falls within the Marin County LCP Unit II.



On federal lands, projects are guided both by the LCP (Marin County Comprehensive Planning Department 1981) – as federal agencies must be consistent with the policies of the Coastal Act – and the GMP. In general, there should be agreement between these two plans, although the GMP is, by definition, more limited in scope to just federal parklands and is more general in nature than the LCP (Marin County Comprehensive Planning Department 1981).

### ***Park Management and Zoning***

Through a memorandum of agreement between the two national parks, the Seashore manages the 19,265 acres of Bolinas Ridge and portions of Olema Valley and Tomales Bay for GGNRA, including the Giacomini Ranch. The boundaries of the two parks extend on both sides of Tomales Bay, with the Seashore's boundary extending from the Point Reyes Peninsula into subtidal lands on the west side of Tomales Bay and GGNRA's boundary covering the eastern side of Tomales Bay. These incorporated lands include both lands owned by the Park Service, as well as lands that are in private, county, or state ownership. In addition, the Seashore has a 50-year lease on most of Tomales Bay's subtidal lands from SLC to create a more seamless management boundary of the Bay's aquatic resources.

The Seashore and GGNRA currently share a General Management Plan (NPS 1980), which uses three zoning designations to guide park management -- Natural Resource Zone, Historic Resource Zone, and Special Use Zone. The Natural Resource Zone covers pastoral lands, natural landscape areas, sensitive resources, designated wilderness and marine reserves. Historic ranches, the Point Reyes lighthouse, and the lifesaving station are included in the Historic Resource Zone: more information on the Historic Resource Zone can be found under the Cultural Resources section. A third zone called Special Use Zone exists within the boundaries of the Seashore and GGNRA, but these lands are managed by another entity such as Mt. Tamalpais State Park and Audubon Canyon Ranch.

The Natural Resource Zone contains two management zones that are pertinent to the Giacomini project – the Pastoral Landscape Management Zone and Special Protection Zone. Approximately 19,000 acres of the northern Point Reyes Peninsula of the Seashore have been retained in agricultural production within the pastoral zone that supports beef and dairy production. The north district GGNRA in northern Olema Valley contains an additional 10,500 acres leased for cattle grazing. These lands constitute the Pastoral Landscape Management Zone. Pastoral operations presently include six dairies and nine beef cattle ranches. The current GMP indicates that, at a minimum, agricultural buildings and open grasslands will be retained in these areas, and, where feasible, livestock grazing will continue within the limits of carefully monitored range capacities (NPS 1980). This plan acknowledged, however, that future resource management studies could significantly alter the configuration of this zone.

The Special Protection Zone incorporates lands that have received legislative or special administrative recognition of exceptional natural qualities requiring strict protection measures. It includes the Philip Burton Wilderness Area, Gulf of the Farallones National Marine Sanctuary, State of California Marine Reserves, shorelines, and riparian corridors. The boundary for the Farallones National Marine Sanctuary extends into the southern portion of Tomales Bay.

### ***Marin Countywide Plan***

California State law requires that all cities and counties prepare and adopt general plans. These plans must be comprehensive, long-range and internally consistent. Every plan must address seven specific topics, or "elements". The County of Marin is currently in the process of updating the Marin Countywide Plan (CWP; Marin County Community Development Agency 2005). The draft EIR was initially released in August 2005 and has been subsequently revised. The purpose of the Plan Update is to set policy guidelines for future conservation and development in the county and to address changed conditions since the last revision of the CWP (Marin County Community Development Agency 1994).

**Planning Policies:** Point Reyes, including the Project Area, is located in an unincorporated area of the county. The CWP establishes an overall framework and set of goals for countywide development in unincorporated areas. The draft 2005 CWP update also includes implementing program concepts for updating the 2003 Development Code. Included in updated CWP are the seven mandatory General Plan Elements required by the State Planning and Zoning Laws (e.g., Conservation, Land Use, Circulation, Noise, and



Safety), as well as five optional elements that were included in the 1994 CWP (Agriculture, Community Facilities, Parks and Recreation, Trails, and Economic). Many unincorporated communities areas of Marin are guided by community plans that provide specific direction regarding land use, transportation, community facilities, building design, and environmental quality, as well as issues unique to a particular community (CWP 2005). The town of Point Reyes Station has developed the Point Reyes Station Community Plan, which was last revised in 2000 (see description below).

The draft CWP (2005) includes goals, policies, and specific implementation objectives for topics included under each of the required and optional elements. Some of the most pertinent policies or implementation objectives are summarized briefly below.

- Lands of GGNRA should be retained in natural state to the greatest extent possible.
- *Protect Open Lands in the Coastal Recreational Corridor* to preserve the rural character, agriculture, and open lands, and protect existing communities and recreational opportunities in the Coastal Corridor.
- *Maintain Village Character in West Marin* through establishment of Community Plans.
- *Restore and Enhance Watersheds*.
- *Promote Natural Stream Channel Function*, including protection and enhancement of fish habitat.
- *Protect Wetlands, Essential Habitat for Special-Status Species, Sensitive Natural Communities, and Important Habitat Wildlife Nursery Areas and Movement Corridors*.
- *Preserve Ecotones* to ensure that "ecotones," or natural transitions between habitat types, are preserved and enhanced because of their importance to wildlife.
- *Limit Access to Wetlands* to avoid or minimize disturbance to wetlands, necessary buffer areas, and associated important wildlife habitat while facilitating public use, enjoyment, and appreciation of bayfront lands.
- *Protect people and property* from risks associated with flooding and inundation.
- *Keep West Marin Rural* by limiting West Marin roads to two lanes, and work with State and federal agencies and local communities to enhance road safety, improve pedestrian, bicycle and transit access through means such as creating an East/West Greenway along the railroad right-of-way.
- *Promote Transportation Alternatives* by working with local, state, and federal governments, businesses, schools, seniors, and environmental groups to encourage use of transit, vanpools, carpools, car sharing, bicycles, and walking for commuting.

**Land Use:** The Draft 2005 CWP Update retains the "corridor" concept of the 1994 CWP, dividing the County into designated regional units based on specific geographic and environmental characteristics and natural boundaries formed by north/south trending geomorphic ridges. The Project Area falls within the Coastal Corridor. The Coastal Corridor, adjacent to the Pacific Ocean, is designated for federal parklands, recreational uses, agriculture, and the preservation of existing small coastal communities. In addition to the four environmental corridors, there are seven planning areas that define Marin County. One of the planning areas covers both the Coastal and Inland Rural Corridors of West Marin. The West Marin planning area generally consists of open space and agricultural lands and small villages located west of the City Centered Corridor from Fort Cronkite Baker in the south to the Sonoma County line in the north and includes GGNRA, the Seashore, Point Reyes Station, and the Project Area.

Within the West Marin planning area, the Giacomini Ranch is currently designated C-AG1, which is Coastal Agricultural with one unit allowed per 31-60 acres (Figure 18). Olema Marsh is designated C-OS for Coastal Open Space (Figure 18). In general, the Giacomini Ranch is agricultural land that is almost entirely bounded by residential, commercial, and open space lands. The nearest agricultural operations would be the Martinelli Ranch north of the East Pasture, which is operated under lease by GGNRA, and the Genazzi Ranch, which is southwest of the Green Bridge and south of State Route 1. Surrounding lands to the east of the Giacomini Ranch are a mixture of land use designations summarized as follows (Figure 18):



- *C-OS* (Coastal Open Space): Martinelli Ranch parcel of GGNRA; Green Bridge County Park; White House Pool County Park.
- *C-AG3* (Coastal Agricultural with one unit allowed per 1-9 acres): Residential neighborhoods on Point Reyes Mesa; House on west side of Olema Marsh and east of Bear Valley Road.
- *C-MF3* (Coastal Multi-Family with five to 10 units allowed per acre): Residential neighborhood directly north of Giacomini Dairy;
- *C-SF5* (Coastal Single Family with 2-4 units allowed per acre): Residential and commercial neighborhood near and along 3<sup>rd</sup> and C Streets in Point Reyes Station;
- *C-RS* (Coastal Residential Commercial): Residential and commercial neighborhood near intersection of State Route 1 and Levee Road at Green Bridge;
- *C-SF4* (Coastal Single Family with one to two units allowed per acre): Residential neighborhood on north side of Levee Road.
- *C-SF3* (Coastal Single Family with one unit allowed per 1-5 acres): Residential neighborhood on west side of Sir Francis Drake Boulevard north of Bear Valley Road throughout Inverness Park; the Lucchesi and Kostelic residences; and a portion of the undeveloped West Pasture between the Gradjanski and Lucchesi/Kostelic residences.
- *C-GC* (Coastal General Commercial with Floor to Area Ratio of 0.05 to 0.30): Perry's Deli and adjacent stores and Gradjanski residence in Inverness Park.

### ***Marin County Zoning Ordinance***

The County regulates activities by state and local agencies through ordinances, codes, and other measures. The zoning code (Marin County Code Title 22) establishes development regulations that are based on land use designations for different areas established in the CWP. Within each zoning district, specific regulations are established for permitted and conditional land uses and for maximum density and building height.

The Giacomini Ranch lowlands in the East and West Pastures are zoned Coastal Agricultural Production Zone, with 1 housing unit per 60 acres (Figure 19). The portion of Olema Marsh owned by Audubon Canyon Ranch is zoned Open Area, while the portion owned by the Seashore is zoned Agricultural, Residential, Planned (Figure 19). The portion of the dairy facility fronting C Street is zoned Coastal Residential, Agricultural, 10,000-square-foot minimum lot size (Figure 19). The upland area near Mesa Road and the Giacomini Hunt Lodge is zoned Coastal Residential, Agricultural, with 1 housing unit per acre (Figure 19).

Zoning of surrounding lands is a mixture of zoning districts, similar to the land use designations. These are summarized as follows (Figure 19):

- *C-O-A* (Coastal Open Area): Martinelli Ranch parcel of GGNRA; Green Bridge County Park; White House Pool County Park.
- *C-ARP-1* (Coastal Agricultural, Residential, Planned, 1 unit per acre): Residential neighborhood on Point Reyes Mesa;
- *C-RMP-6.5* (Coastal Residential Multiple Planned, 6.5 units per acre): Residential neighborhood directly north of Giacomini Dairy;
- *C-R-A:B-2* (Coastal Residential, Agricultural 10,000 square foot minimum lot size): Residential and commercial neighborhood near and along 3<sup>rd</sup> and C Streets in Point Reyes Station;





FIGURE 18. COUNTY LAND USE DESIGNATIONS



FIGURE 19. COUNTY ZONING



- *C-VCR:B-2* (Coastal Village Commercial Residential 10,000 square foot minimum lot size): Residential and commercial neighborhood near intersection of State Route 1 and Levee Road at Green Bridge;
- *C-R-A:B-3* (Coastal Residential, Agricultural 20,000 square foot minimum lot size): Residential neighborhood on north side of Levee Road.
- *C-ARP-5* (Coastal Agricultural, Residential, Planned, 1 unit per 5 acres): House on west side of Olema Marsh and east of Bear Valley Road.
- *C-RSP* (Coastal Residential Single Family Planned): West side of Sir Francis Drake Boulevard north of Bear Valley Road throughout Inverness Park and a portion of the West Pasture between the Gradjanski and Lucchesi/Kostelic residences, including the Lucchesi and Kostelic residences.
- *C-GC* (Coastal Commercial Planned): Perry's Deli and adjacent stores and Gradjanski residence in Inverness Park.

## ***Marin County Local Coast Program Unit II***

In 1976, the California Legislature enacted the Coastal Act, which created a mandate for coastal counties to manage the conservation and development of coastal resources through a comprehensive planning and regulatory program called the LCP. The LCP is a planning document that identifies the location, type, densities, and other ground rules for future development in the coastal zone. Each LCP includes a land use plan and its implementing measures. These programs govern decisions that determine the short and long term conservation and use of coastal resources. LCPs are designed to be updated regularly: The Marin County Community Development Agency was planning to update the LCP (Marin County Comprehensive Planning Department 1981) as part of the updated CWP process, but has postponed the LCP update.

Marin County's Local Coastal Program is divided into two units: Unit I and Unit II. Unit II was certified in 1981 and includes the communities of Olema, Point Reyes Station, Inverness, Dillon Beach and Oceana Marin, Marshall, and Tomales. The primary goals of the LCP are to ensure that the local government's land use plans, zoning ordinances, zoning district maps, and implemented actions meet the requirements of -- and implement the provisions and policies of -- the Coastal Act at the local level.

Generally, the Coastal Act requires protection, enhancement, and restoration of environmentally sensitive habitats (including wetlands and riparian habitat); protection and expansion of public access to the shoreline and recreational opportunities and resources; protection of the scenic coastal landscape; and protection of productive agricultural lands. The LCP (Marin County Comprehensive Planning Department 1981) has grouped its policies under four major headings: Public Access and Recreation, Resource Protection (including Natural and Agricultural), Tomales Bay Uses, and Public Services and New Development.

As noted earlier, where there are overlapping policies, the LCP policies supersede those of the County and other organizations in the Coastal Zone. Because the LCP (Marin County Comprehensive Planning Department 1981) is the primary planning document guiding development in the region where the Project Area is located, specific policies that potentially pertain to the proposed project are outlined below:

### ***Resource Protection-Natural Resources***

- *Natural Resources on Federal Parklands:* Federal projects involving the modification or alteration of natural resources should be evaluated by the Coastal Commission through the federal consistency review process.
- *Water quality.* The County encourages the Regional Water Quality Control Board, State Department of Health, and other responsible agencies to continue working on identifying sources of pollution in Tomales Bay and to take steps to eliminate them.
- *Stream alterations.* Stream impoundments, diversions, channelizations, or other substantial alterations shall be limited to those for (1) necessary water supply projects, (2) flood control projects where no other feasible method is available, and (3) developments where the primary function is the improvement of fish and wildlife habitat.
- *Stream Buffers.* Buffers to protect streams from the impacts of adjacent uses shall be established for each stream in Unit II. The stream buffer shall include the area covered by riparian vegetation on both



sides of the stream and the area 50 feet landward from the on edge of the riparian vegetation. In no case shall the stream buffer be less than 100 feet in width, on either side of the stream, as measured from the top of the stream banks.

- *Development in Stream Buffers.* No construction, alteration of land forms or vegetation shall be permitted within such riparian protection area. Additionally, the stream buffer will extend a minimum of 50 feet from the outer edge of riparian vegetation, but no less than 100 feet from the banks of a stream.
- *Wetlands.* Wetlands in the Unit II coastal zone shall be preserved and maintained as productive wildlife habitats, recreational open space, and water filtering and storage areas. Allowable resource-dependent activities in wetlands shall include fishing, recreational clamming, hiking, hunting, nature study, bird-watching and boating. No grazing or other agricultural uses shall be permitted in wetlands except in those reclaimed areas presently used for such activities. A buffer strip 100 feet in width, minimum, as measured landward from the edge of the wetland, shall be established along the periphery of all wetlands.
- *Other Environmentally Sensitive Habitats.* Other sensitive habitats include habitats of rare or endangered species and unique plant communities. Development in such areas may only be permitted when it depends upon the resources of the habitat area.

### ***Public Access and Recreation***

- *General Policy:* The County of Marin supports and encourages the enhancement of public recreational opportunities and the development of visitor-serving facilities in its coastal zone. Such development must, however, be undertaken in a manner which preserves the unique qualities of Marin's coast and which is consistent with the protection of natural resources and agriculture. Generally, recreational uses shall be of low-intensity such as hiking, camping, and fishing in keeping with character of the existing uses in the coastal zone.
- *Policy on Public Access in Federal Parklands:* Additional coastal access trails and bike paths should be provided where feasible and where consistent with the protection of the parks' natural resources.
- *Bluff-Top Development:* Setbacks from the bluff above the old railroad right-of-way in the Giacomini Ranch's East Pasture shall also be required, consistent with LCP policies on bluff-top development.
- *Bike Paths:* The County supports the concept of a bike/pedestrian trail network in Unit II, connecting the villages and providing access to public parks. Several proposed routes have been discussed by West Marin residents and planning groups, but no final recommendation has been developed. In the absence of such a recommendation, the LCP (Marin County Comprehensive Planning Department 1981) assumes that the most likely location for a bike trail is along Highway 1 and Sir Francis Drake Boulevard. Therefore, to maintain the option for a roadside trail, 10-foot easements will be required for all development projects on either side of these roads. When a final route is agreed upon by the County, community, and concerned agencies and organizations, requirements for roadside easements will be modified to account for the new route.

### ***Public Services and New Development***

- *Transportation and Road Capacity:* Sir Francis Drake Boulevard provides a scenic driving experience for coastal visitors and an important access road for local residents. In order to protect its scenic rural character, the road shall be maintained as a two-lane roadway. Sir Francis Drake has adequate capacity to handle increased recreational and local traffic, although traffic patterns do occasionally create hazardous conditions for pedestrians and bicyclists in the areas of Inverness and Inverness Park.
- *Alternative Transportation:* The County strongly encourages the development of alternative modes of transportation, such as bicycle and pedestrian paths that are separated from the road, where possible.
- *Grading:* Any projects involving the movement of earth in excess of 150 cubic yards must adhere to LCP policies concerning minimization of earth movement, construction windows, erosion control and revegetation, and minimization of impervious surfaces.



## ***Point Reyes Station Community Plan***

As discussed earlier, the state requires each local planning agency such as the County of Marin to adopt a comprehensive, long-term plan for physical development of the region over which it has jurisdiction. Local planning agencies can decide to create separate community plans for individual communities within the general plan boundaries. In these areas, future planning decisions are based on both the general plan and the community-specific plan. The Point Reyes Station Community Plan was first developed in 1976 to provide guidance on current and foreseeable planning and land use issues based on community goals, objectives, and policies. It was later amended in 1986. Starting in 1999, the plan was revised again and was finalized in 2000. As noted earlier, the LCP takes precedence over all local policies and zoning, so the community plan must be consistent with the LCP (Marin County Comprehensive Planning Department 1981) to be valid (Marin County Community Development Agency 2001).

The plan establishes objectives and policies and programs for supporting or implementing objectives on a number of land use, socioeconomic, agricultural, and natural resource issues.

### ***Natural Resources***

- *Support for restoration of the former tidal marshes at the headwaters of Tomales Bay* to natural conditions and protection of the restored wetland in the future through review of development projects or construction activities in consultation with the Park Service and other relevant public agencies and incorporation of either impact avoidance or mitigation measures;
- *Preservation of the physical, ecological, and visual integrity of the bluff area located above the old railroad right-of-way* through the development review process establishment of a 100-foot buffer zone extended eastward from the eastern edge of the railroad grade;
- *Preservation of streams and streamside environments in their natural conditions*, including protection of existing riparian habitat or "buffers" and removal of invasive plant species;
- *Protection and restoration of Tomasini Creek* through allowing the downstream portion to resume its natural slough channel west of Mesa Road, thereby promoting recolonization by steelhead trout; and
- *Protection of Lagunitas Creek, specifically its water quality, coho salmon and steelhead populations, and other aquatic life.*

### ***General Land Use***

- *Zoning:* Proposed projects should not conflict with land-use related policies of Marin CWP, including land use designation or zoning standards.
- *Substantial Alteration in Character of Town:* There should not result in substantial alteration of the character or functioning of the community or present or planned future use of an area.
- *Increase in Recreational Demand:* Demand for neighborhood or regional parks or other recreational facilities should not be substantially increased.
- *Increase Density:* Proposed projects should not increase density that would exceed the official population projections for the planning area within which the Project Area is located as set forth in either the CWP or Community Plan.
- *Induce Substantial Growth:* Substantial growth should not be induced in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure).

## ***Agricultural Land Use***

### ***Regulatory and Policy Setting***

The federal Farmland Protection Policy Act (FPPA) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that -- to the



extent possible -- federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance, which is characterized primarily using soil types, as well as management regimes and other factors. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

National Resources Conservation Service (NRCS) uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. A similar system has been developed for California by the State Department of Conservation, which oversees California's Farmland Monitoring and Mapping Program. This program was established in 1982 to assess the location, quality, and quantity of agricultural lands and conversion of these lands over time. FMMP is a nonregulatory program and provides an analysis of agricultural land use and land use changes throughout California every two years.

The California Land Conservation Act of 1965--commonly referred to as the Williamson Act--enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971. The Giacomini Ranch East and West Pastures are under Williamson Act Contracts, as are some of the adjacent ranches such as the Genazzi Ranch to the south and the Martinelli Ranch, now owned by the GGNRA. Olema Marsh is not under the Williamson Act, nor are the parcels at the dairy facility in Point Reyes Station and several commercial and residentially zoned parcels that are currently or formerly owned by the Giacomini near Inverness Park.

Because of the value of agriculture to Marin's economy and its scenic pastoral landscape, the County and Coastal Zone LCP (Marin County Comprehensive Planning Department 1981) have both identified maintenance of agriculture as a high priority.

### *Marin CWP*

- The draft Marin CWP (1994) focused on protection of open space lands in the Coastal Recreational Corridor to preserve the "rural character, agriculture, and open lands
- Encourage agriculture and mariculture in the Coastal Recreational Corridor (CWP 1994).

### *Marin County Local Coastal Program Unit II*

- *General policy.* Marin County intends to protect the existing and future viability of agricultural lands in its coastal zone, in accordance with Sections 30241 and 30242 of the Coastal Act. The County's LCP policies are intended to permanently preserve productive agriculture and lands with the potential for agricultural use, foster agricultural development, and ensure that non-agricultural development does not conflict with the rural character of the County's coastal zone.
- *Agriculture on Federal Parklands:* The continuation of agricultural land uses in the GGNRA and the Seashore is strongly encouraged, where and at a level which is compatible with the protection of natural resources and public recreational use.
- *Agricultural Production Zone:* Only permitted or conditional uses of lands, which includes wildlife refuges, will be allowed in the Agricultural Production Zone (e.g., lands zoned A-60).
- *Conversion of Agricultural Lands:* Projects should not conflict with general policies on agriculture in the Coastal Zone, specifically on agricultural conversions (Article 5, Sections 30241, Sections 30242).

### *Point Reyes Station Community Plan*



- *Williamson Act Contracts:* Lands with agricultural or open space contracts should be preserved, and proposed projects should not cause conflicts with existing Williamson Act contracts.
- *Effect on Agricultural Resources:* Proposed projects should not have impacts to productive agricultural soils or lands with sufficient water resources.
- *Compatibility of Adjacent Land Uses with Agriculture:* Proposed projects should not negatively affect agricultural resources by creating incompatible land uses with adjacent protected lands).
- *Agricultural Viability:* Proposed projects should not affect agricultural operations such as viability of West Marin agriculture by decreasing productivity.

## ***Regional Agricultural Land Uses***

Agriculture has been an important part of West Marin culture since the mid 19<sup>th</sup> century (University of California 2006). In the early 1820s, Marin was settled by the Mexicans or Californios, whose home base was the San Rafael mission (University of California 2006). The Mexicans raised thousands of longhorn cattle for their hides and tallow (University of California 2006). The cattle ran wild along with herds of native tule elk and were rounded up yearly by Mexican and Miwok vaqueros. After the mission was shut down in 1834, the land and the longhorns were divided up into vast ranchos (University of California 2006).

The Gold Rush of 1849 helped start the dairy industry (University of California 2006). In the 1850s, a San Francisco law firm owned most of the Point Reyes peninsula and established several very successful tenant ranches. They not only produced dairy products, but huge crops of fruit. At that time, most dairy operations were small, 10 to 15 cows, or as many as they could milk by hand (University of California 2006). Before refrigeration, all the milk produced was churned into butter. In 1862, Marin provided a quarter of California's butter (University of California 2006) and was considered one of the state's premiere dairy producers, with products commanding top dollar. Most of the ranches in the Point Reyes area specialized in dairying, cheese and butter production, although some moved into beef cattle ranching and artichoke farming.

---

*Agriculture has been an important part of West Marin culture since the mid 19<sup>th</sup> century.*

---

Marin continues to support agriculture today, although its preeminence in terms of volume has waned, with the smaller West Marin agricultural operations unable to effectively compete against the extremely large operations in California's Central Valley. Animal operations, particularly dairies, produce generate the majority of agricultural revenue in Marin County (CWP, Marin County Community Development Agency 2005). In general, Marin County agriculture contributes a net surplus of \$1.3 million annually to the county's general fund, and property taxes from agriculture generate another \$10.3 million annually that are earmarked for other county funds, such as education (Strong Associates 2003). Local animal products include milk, beef, sheep, poultry, and eggs, with oysters, mussels, and clams being produced by the aquaculture industry (Marin County Community Development Agency 2005). Local farms also produce fruits, vegetables, wine grapes, flowers, nursery crops, wool, and hay, honey, and herbs (Marin County Community Development Agency 2005).

While most of the agricultural revenue still comes from animal operations, the number of dairies in Marin County decreased from 200 to 31 between 1950 and 2000, and the number of cattle dropped from 20,000 to 12,000 (Strong Associates 2003). Despite these decreases in ranches and cows, milk production in Marin has increased from 1.95 million pounds in 1964 to 2.25 million pounds in 2000, because of increased milk production per cow and other farming practice improvements (Strong Associates 2003). Reportedly, about 20 percent of the milk sold in the Bay Area comes from Marin dairies (Marin County Community Development Agency 2003). In addition, specialty products such as organic vegetables, grass-fed meats, olive oil, and farmstead cheese now supplement traditional farm income and have helped Marin to maintain an economic foothold in California's increasingly corporate-driven agricultural industry. Marin is considered a leader in organic agriculture, and local producers and support agencies are mounting a concerted effort to certify organic production and promote agricultural product diversification (Marin County Community Development Agency 2005).

As part of the CWP update, Marin County commissioned an agricultural economic analysis of the Marin County agricultural industry with a focus on land use. Dairies and livestock ranches still continue to cover most of the



county's agricultural land in the County, while smaller areas of row crops occupy better soils, often in valley bottoms (Marin County Community Development Agency 2005). In contrast to the findings in 1973 that the largest threat to agricultural lands came from the potential of subdivision into suburban housing, the major issue facing agricultural lands today stems from gentrification or conversion into high value estate development (Strong Associates 2003). This conversion increases the costs of land ownership disproportionately higher than income earned from agricultural operations, thereby creating an economic disincentive for continuing to farm (Strong Associates 2003).

## Geologic Resources

### *Subsidence and uplift*

### *along the San Andreas*

### *Fault have created a*

### *mosaic of topographic*

### *landforms that promotes*

### *wetland establishment,*

### *including steep ravines,*

### *depressional "sag" ponds*

### *along the fault, broad*

### *floodplains, lagoons, and*

### *even isolated lakes.*

As with other vegetation communities, wetlands are ultimately products of geology. Geology provides the framework under which all other physical and biological forces such as water, sediment, climate, plants, and animals can interact, creating a hydrologically-driven vegetation community with special importance for both humans and wildlife. Nowhere is this more evident than in the Tomales Bay watershed. Tomales Bay and coastal Marin County have both an abundance and diversity of wetland types.

Geology has contributed to this abundance and diversity in a number of ways. Subsidence and uplift along the San Andreas Fault have created a mosaic of topographic landforms that promotes wetland establishment, including steep ravines, depressional "sag" ponds along the fault, broad floodplains, lagoons, and even isolated lakes. This fault-associated topography is juxtaposed against other geologic forces such as coastal erosion processes, which has, over the millennia, created wave-cut platforms. In combination with fault-associated uplift, coastal erosional processes have continually reshaped the northern California coastline and its associated wetlands through processes such as marine terrace building. These geologic forces have also produced a diverse array of hydrologic sources for wetlands, including tidal waters and abundant groundwater seeps and springs that serve as sources or "headwaters" for many of the bay's perennial and seasonal streams and marshes.

Geology even affects the duration of hydrology. Creeks draining off the granite-dominated Inverness Ridge tend to be perennial, while those flowing off Franciscan Complex Bolinas Ridge are seasonal or even ephemeral. The strong

interaction between geology and wetlands is particularly visible within the Project Area. This relationship is discussed more in subsequent sections of this Chapter, including Water Resources and Vegetation Resources.

## Geologic Resources within the Region and Project Area

The nature of the Project Area has been sharply defined by this region's unique geologic history. The sheer number of fault- and coastal erosion-associated features in this region such as trenches, shutter ridge, fault sag ponds, stream offsets, marine terraces, folded shales, sea stacks, sea caves, and pillow basalt formations has created a wealth of unique geologic resources that draw both amateur and professional geologists to Point Reyes. The San Andreas Fault, responsible for the 1906 Earthquake that devastated San Francisco, runs directly through the Project Area and Tomales Bay. The San Andreas Fault is perhaps the best known fault in California, although there are more than 20-30 other faults in the San Francisco Bay region. "It is the most significant geological feature in the watershed, influencing the geology, topography and overall stability of the area" (TBWC 2003). The San Andreas Fault Zone (SAFZ) forms the active tectonic boundary between the northwestward-moving Pacific plate and the continental North American plate.

Tomales Bay is a relatively shallow estuary that has formed within the long, linear, submerged "rift" valley that has developed along the northwest-trending San Andreas Fault zone. The Bay was formed 15,000 to 5,000 years ago when it was inundated by rising sea levels from thawed ice at the close of the last ice age (Wahrhaftig and Wagner 1972). Through the millennia, tectonic uplift or subsidence associated with plate movement, combined with other influences such as glacial retreat, has shaped the northern California coastline, with oceanic influence alternately retreating or advancing into this fault-controlled valley. At one

